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EXAMINER	
AHMED, SALMAN	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/815,401	RAVERDY ET AL.	
	Examiner	Art Unit	
	SALMAN AHMED	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *3/31/2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-40 are pending.

Claims 1-40 are rejected.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 25-36 are rejected under 35 U.S.C. 101.

Claim 25 state “machine-accessible storage medium”. Specification paragraph 0108 states : “The term hardware generally refers to an element having a physical structure such as electronic, electromagnetic, optical, electro-optical, mechanical, electro-mechanical parts, etc. The term firmware generally refers to a logical structure, a method, a procedure, a program, a routine, a process, an algorithm, a formula, a function, an expression, etc that is implemented or embodied in a hardware structure (Examiner notes: embodied in electromagnetic, optical, electro-optical?) (e.g., flash memory, ROM, EROM). Examples of firmware may include microcode, writable control store, microprogrammed structure. The "processor readable or accessible medium" or "machine readable or accessible medium" may include any medium that can store, transmit, or transfer information. Examples of the processor readable or machine accessible medium include an electronic circuit, a semiconductor memory device, a read only memory (ROM), a flash memory, an erasable ROM (EROM), a floppy diskette, a compact disk (CD) ROM, an optical disk, a hard disk, a fiber optic medium, a radio frequency (RF) link, etc. The computer data signal may include any signal that can

propagate over a transmission medium such as electronic network channels, optical fibers, air, electromagnetic, RF links, etc.

Claims 25-36 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding Claims 25-36, the claims are directed to a “machine-accessible storage medium" (descriptive material) per se as recited and is considered non-statutory subject matter. (See MPEP 2I06.IV.B.1(a)). Machine-readable instructions stored in data structures, program modules, or other data in a modulated data signal such as a carrier wave or other transport mechanism are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at l36 l , 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed Machine-readable instructions, data structures, program modules, or other data in a modulated data signal such as a carrier wave or other transport mechanism do not define any structural and functional interrelationships between the Machine-readable instructions, data structures, program modules, or other data in a modulated data signal such as a carrier wave or other transport mechanism and other claimed aspects of the invention, which permit the Machine-readable instructions, data structures, program modules, or other data in a modulated data signal such as a carrier wave or other transport mechanism's functionality to be realized.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 25-36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

4. Claim 25 states “machine-accessible storage medium” which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

To further clarify, since, "processor readable or accessible medium" or "machine readable or accessible medium" may include any medium that can transmit, or transfer information, and the processor readable or machine accessible medium is a radio frequency (RF) link, it is unclear as to how a machine can store data in a RF link (a non-tangible medium), access the data to perform the operations of claim 25. Therefore, claim 25 contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 3-8, and 10-13, 15-20, and 22, 24-25, 27-32, 34 and 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari (US20040174829) in view of Andric et al. (US PAT PUB 2004/0018839, hereinafter Andric).

Regarding claims 1, Ayyagari discloses a centralized network organization and topology discovery in ad-hoc network with central controller (see paragraph 5) comprising: a frame module (see paragraph 25 central coordinator(Cco)) to process a frame containing information regarding a local node in a first network (see paragraph 64 Device Class and Activity Indicator), the information including discovery information (Figure 5, Device Class and paragraph 0120) and network state information (see paragraph 64 network state information is not further specified and therefore the term is broadly interpreted and figure 5 Activity indicator which indicates how busy a device is

corresponds to network state information. In paragraph 0064, Ayyagari further states Activity Indicator is an optional parameter indicating how busy a device is, in terms of its duty cycle. If a device is not transmitting or receiving data (i.e. if the network connected to the device is transmitting or receiving data) this value is 0), the discovery information being represented in a common description (see paragraph 55 line 1 - 9 and figure 5 and figure 6); • an information module (see paragraph 75-79, topology table) coupled to the frame module to manage the information (see paragraph 75-79 where CCo maintains a topology table); and • a communication module (implicilty CCo comprises a communication module for communicating with other nodes) coupled to the frame module and the information module to manage communication between the local node and a remote node (see paragraph 21 and 75-79 where CCo maintains a topology table of the discovered node lists and topology is being update in paragraph 84, and paragraph 88 where node communicate with CCo is being specified with beacon message) in a second network using the information (see paragraph 21).

Ayyagari does not explicitly teach a communication module and state information including at least one of network configuration, network status and network history.

Andric in the same or similar field of endeavor teaches a communication module (paragraph 0212 and Figure 75) and state information including at least one of network configuration, network status and network history (paragraph 0128).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate in Ayyagari's system/method the communication module and state information including at least one of network configuration, network status and

network history as suggested by Andric. The motivation is that (as suggested by Andric, paragraph 0127) such method enables a node to keep up-to-date route information for future routing; thus making the network efficient and reliable. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Regarding claim 3, Ayyagari teaches the frame receiver forwards the received remote frame to the communication module if the received remote frame is related to the network communication (see paragraph 88 beacon message).

Regarding claim 4, Ayyagari teaches the frame receiver forwards (see paragraph 89 line 7-10) the received remote frame to the information module of the local node, to another local node in the first network, or to another remote node if the received remote frame is related to information exchange and meets an acceptance condition (see paragraph 89 admission in the network).

Regarding claim 5, Ayyagari teaches the acceptance condition is based on a forwarding number and propagation parameters (see paragraph 79) including a propagation list (see paragraph 76) and a propagation type (see paragraph 89 slot number of a contention channel), the forwarding number and the propagation type being contained in the frame (see paragraph 89 line 1-5 and paragraph 91 line 3 T_d iscovery_interval).

Regarding claim 6, Ayyagari teaches the information module comprises: • a collector to collect the information (see paragraph 113); • a translator coupled to the

collector to translate the discovery information into the common description (see figure 6 and paragraph 66 line 10-11); • a node selector coupled to the collector to determine if the local node participates in the communication based on the network state information of the local node and other network state information from another local node in the first network (see paragraph 70 a new device that has been selected as the CCo); and • a synchronizer to synchronize the collected information with other information from other local nodes in the first network (see paragraph 55 and 84 update its discovered node list).

Regarding claim 7, Ayyagari teaches the information module further comprises: • an information table to store entries regarding information extracted from a received remote frame (see paragraph 76 topology table); and • an information table updater to update the entries (see paragraph 84).

Regarding claim 8, Ayyagari teaches the communication module comprises: • a usage evaluator to evaluate network usage to determine relative location of the second network based on an interference list from the network state information (see paragraph 118 line 3-6 and paragraph 147); • a channel migration evaluator to evaluate a channel allocation layout (see paragraph 118 line 6-11 quality indicator); • a channel change controller to control a channel change based in the channel allocation layout (see paragraph 118 line 8-10); and • a channel changer to change channel of the local node according to a wireless mode used by the node (see paragraph 118 line 8-10 and paragraph 121 line 1).

Regarding claim 10, Ayyagari teaches the discovery information includes information on at least node device (see figure 1 ref20 ref 30), node service (see paragraph 46), and user (see figure 1 ref20 ref 30).

Regarding claim 12, Ayyagari teaches the interference list includes at least a network from which the local node receives a beacon or directly receives a remote frame from the remote node (see paragraph 46).

Regarding claims 13, 15-20, 22 and 24, Ayyagari and Andric disclose all the limitations as discussed in the rejection of apparatus claims 1,3-8, and 10-12 and are therefore method claims 13, 15-20, 22 and 24 are rejected using the same rationales.

Regarding claims 25, 27-32, 34 and 36, Ayyagari teaches a self-organizing ad-hoc communication networks (see paragraph 4 it is inherent devices (nodes) are computerized and is functioned by a set data) and in view of Andric disclose all the limitations as discussed in the rejection of apparatus claims 1,3-8, and 10-12 and are therefore article or manufacture claims 25, 27-32, 34 and36 are rejected using the same rationales.

Regarding claims 37-40, Ayyagari in view of Andric disclose all the limitations as discussed in the rejection of apparatus claims 1-2, 6, and 8 and are therefore apparatus claims 37-40 are rejected using the same rationales.

9. Claims 2, 9, 14, 21, 26, and 33 rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari and Andric as applied to claims 1, 13, 25 and 37 and further in view of Barber et al. (US20050073979).

Regarding claim 2, Ayyagari teaches the frame module comprises: • a frame builder to build the frame containing the information (see paragraphs 57-60 and it is inherent for message to contains information); • a frame transmitter (see paragraph 58) coupled to the frame builder (see paragraphs 57-60 and it is inherent for message to contains information such as allocation frame number, time slot) to transmit the frame (see paragraph 58 a message transmitted by the CCo) to another local node in the first network or the remote node in the second network (see Ayyagari paragraph 54 the node communicates with the CCo directly or through an intermediary node, and registers in the network); • a frame receiver to receive another frame from another local node in the first network (see paragraph 48 a discovery msg message has been received) or to receive a remote frame from the remote node (see paragraph 24 and 88-89); and disclose all the subject matter of the claimed invention with the exception of • a frame poller coupled to the frame transmitter to provide a polling frame requesting for information of the remote node.

In the background of Barber et al. the same or similar fields of endeavor teaches the use of polling interaction (see Barber et al. paragraph 12 and figure 12 and paragraph 103 package up traffic between visitor clients).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the polling and packaging of traffic as taught Barber et al. in the discovery in ad-hoc network with central controller of Ayyagari and Andric in order to increase efficiency of the transmission system. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on

design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Regarding claim 9, Ayyagari disclose all the subject matter of the claimed invention with the exception of the channel migration evaluator evaluates an alternate layout based on a relationship between interference and channel distance.

Barber et al. from the same or similar fields of endeavor teaches the use of distance between two radio sources is determinable from signal strength (see Barber et al. paragraph 84), and calculated physical positions of each radio and stats about nearby interference (see Barber et al. paragraph 86).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the determining signal strength, and calculating physical positions of each radio and stats about interference as taught by Barber et al. in the ad-hoc network with central controller of Ayyagari and Andric in order to increase efficiency of the transmission system. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Regarding claims 14, 21, 26, and 33, Ayyagari, Andric and disclose all the limitations as discussed in the rejection of apparatus claims 2 and 9 and are therefore apparatus claims 14, 21, 26, and 33 are rejected using the same rationales.

9. Claims 11, 23 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari and Andric as applied to claims 1, 13 and 37 and further in view of Nanda et al. (US2005/0192037, hereinafter Nanda).

Regarding claim 11, 23 and 35 Ayyagari and Andric teach the network state information as described above.

Ayyagari and Andric do not explicitly teach network state information including an interference list.

Nanda in the same field of endeavor teaches network state information including an interference list (paragraphs 0010, 0013, 0014, 0065, 0071, 0076, 0079 and 0080).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate in Ayyagari and Andric's system/method the step of network state information including an interference list as suggested by Nanda. The motivation is that such method of providing interference list enables a network to be aware of all of the surrounding topologies and thus, configure various nodes to be operable in a seamless and reliable manner. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Response to Arguments

1. Applicant's arguments see pages 12-29 of the Remarks section, filed 3/31/2009, with respect to the rejections of the claims have been fully considered and are not persuasive.

Clarifications as requested by Applicant:

2. Regarding claims 37-40, office action dated 1/2/2009 clearly states as shown below:

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> Art Unit: 2419
>
> Regarding claims 37-40, Ayyagari in view of Andric disclose all the limitations as discussed in the rejection of apparatus claims 1-2, 6, and 8 and are therefore apparatus claims 37-40 are rejected using the same rationales.

In regards to Applicant's question "b) Page 6, paragraph 9 states that the rejection is under 35 USC 102(e) while the heading is 35 USC 103" is clearly a typographical error as the rest of the construct of the claim rejection clearly follows the following:

The Basic Factual Inquiries of Graham v. John Deere Co.

An invention that would have been obvious to a person of ordinary skill at the time of the invention is not patentable. See 35 U.S.C. 103(a). As reiterated by the Supreme Court in *KSR*, the framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries. The factual inquiries enunciated by the Court are as follows:

(A) Ascertaining the differences between the claimed invention and the prior art; and

(B) Ascertaining the differences between the claimed invention and the prior art; and

(C) Resolving the level of ordinary skill in the pertinent art.

In regards to Applicant's comments: "c) Page 13, paragraph 9 states that claims 11, 23, and 35 are rejected under Ayyagari and Andric in view of Barber, but the

following paragraphs discuss Nanda. Applicant assumes that Barber was incorrectly cited and the correct reference is Nanda" – Examiner respectfully agrees with the Applicant's assertion.

Objection to Drawing:

Applicant's amendment to drawing is accepted and objection to drawing is withdrawn.

Rejection under 35 USC 101:

Applicant argues (see pages 12-13) that "...the claim remains statutory irrespective of the fact that a computer program is included in the claim. MPEP 2106.01.I (Emphasis added.) Such a Beauregard claim has been determined statutory. In re Nuijten, 500 F.3d 1346 (Fed. Cir., 2007) ("It has been the practice for a number of years that a 'Beauregard Claim' of this nature be considered statutory at the USPTO as a product claim."). Accordingly, claims 26-30 are statutory".

However, Examiner respectfully disagrees with the Applicant's interpretation of the Examiner's rejection of claims 26-30. Claim 25 recites "An article of Manufacture" and "a machine-accessible storage medium". According to the specification, paragraph 0108 states : "The term hardware (i.e. article or manufacture) generally refers to an element having a physical structure such as electronic, electromagnetic, optical, electro-optical, mechanical, electro-mechanical parts, etc. (Examiner notes: as such, article of manufacture can be an element having a physical structure such as electromagnetic parts) The term firmware generally refers to a logical structure, a method, a procedure, a program, a routine, a process, an algorithm, a formula, a function, an expression, etc

that is implemented or embodied in a hardware structure (Examiner notes: data embodied in electromagnetic parts?) (e.g., flash memory, ROM, EROM). Examples of firmware may include microcode, writable control store, microprogrammed structure. The "processor readable or accessible medium" or "machine readable or accessible medium" may include any medium that can store, transmit, or transfer information. Examples of the processor readable or machine accessible medium include an electronic circuit, a semiconductor memory device, a read only memory (ROM), a flash memory, an erasable ROM (EROM), a floppy diskette, a compact disk (CD) ROM, an optical disk, a hard disk, a fiber optic medium, a radio frequency (RF) link, etc. The computer data signal may include any signal that can propagate over a transmission medium such as electronic network channels, optical fibers, air, electromagnetic, RF links, etc.

Therefore, in light of the specification, “An article of Manufacture” and “a machine-accessible storage medium” can be implemented without any tangible hardware medium, i.e. can be implemented electromagnetically and as a transmission medium such as air, RF signals etc. As such, Claims 25-36 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter (i.e. non-tangible transmission media such as RF, electromagnetic media, air etc). Regarding Claims 25-36, the claims are directed to a non-tangible “machine-accessible storage medium" (descriptive material) per se as recited and is considered non-statutory subject matter. (See MPEP 2I06.IV.B.1(a)). Machine-readable instructions stored in data structures, program modules, or other data in a modulated data signal

such as a carrier wave, RF, air or other transport mechanism are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at l36 l , 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed Machine-readable instructions, data structures, program modules, or other data in a modulated data signal such as a carrier wave or other transport mechanism do not define any structural and functional interrelationships between the Machine-readable instructions, data structures, program modules, or other data in a modulated data signal such as a carrier wave or other transport mechanism and other claimed aspects of the invention, which permit the Machine-readable instructions, data structures, program modules, or other data in a modulated data signal such as a carrier wave or other transport mechanism's functionality to be realized.

Therefore, claim 25, in light of the specification, discloses a non-tangible article of manufacture as a whole.

Rejection under 35 USC 112:

Applicant argues (see page 13) that the specification describes alternative embodiments; Claims 25-36 recites a "storage medium"; Clearly, a storage medium can store data.

However, Examiner respectfully disagrees with Applicant's assertion.

Specification paragraph 0108 clearly states:

The "processor readable or accessible medium" or "machine readable or accessible medium" may include any medium that can store, transmit, or transfer

information. Examples of the processor readable or machine accessible medium include an electronic circuit, a semiconductor memory device, a read only memory (ROM), a flash memory, an erasable ROM (EROM), a floppy diskette, a compact disk (CD) ROM, an optical disk, a hard disk, a fiber optic medium, a radio frequency (RF) link, etc. The computer data signal may include any signal that can propagate over a transmission medium such as electronic network channels, optical fibers, air, electromagnetic, RF links, etc.

Since, "processor readable or accessible medium" or "machine readable or accessible medium" may include any medium that can transmit, or transfer information, and the processor readable or machine accessible medium is a radio frequency (RF) link, it is unclear as to how a machine can store data in a RF link (a non-tangible medium), access the data to perform the operations of claim 25. Therefore, claim 25 contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

8. In regards to Claims 25-36 being rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, Applicant's argument is persuasive.

Rejection under 35 USC 103:

Claims 1, 3-8, and 10-13, 15-20, and 22, 24-25, 27-32, 34 and 36-40:

Applicant argues (see page 17) that there is no teaching (by Ayyagari) of "a frame containing information.., including discovery information and network state information."

However, Examiner respectfully disagrees with Applicant's assertion. Ayyagari does indeed teach the cited limitations. Specifically, Ayyagari teaches a frame (DICOVERY_MSG meets the limitation of a frame) containing information regarding a local node in a first network (see paragraph 64 Device Class and Activity Indicator), the information including discovery information (Figure 5, Device Class and paragraph 0120) and network state information (see paragraph 64 network state information is not further specified and therefore the term is broadly interpreted and figure 5 Activity indicator which indicates how busy a device is corresponds to network state information. In paragraph 0064, Ayyagari further states Activity Indicator is an optional parameter indicating how busy a device is, in terms of its duty cycle. If a device is not transmitting or receiving data (i.e. if the network connected to the device is transmitting or receiving data) this value is 0). Clearly, the limitation “discovery information” (device class) and “”network state information” (Activity indicator) are within the same DICOVERY_MSG frame as can be seen from figure 5.

Applicant argues that (see page 17) CCo cannot be the information module since the topology table does not account for the CCO_NETCONFIG_MSG information. However, Examiner respectfully disagrees with Applicant’s assertion. The current claim language is broad which states: “an information module…to manage the information”; “the information” being defined as “discovery information” and “network state

information"; and "network state information being defined as one of "network configuration", "network status" and "network history". Topology table as shown in figure 10 has "discovery information" (Discovered Node Lists) and "network configuration" (broadly interpreted as Device Class) and/or "network status" (broadly interpreted as Nodes column). As such, Ayyagari does indeed teach an information module (see paragraph 75-79, topology table) coupled to the frame module to manage the information (see paragraph 75-79 where CCo maintains a topology table).

Applicant argues that (see page 17) the Examiner interprets the CCo as the frame module and as the information module (Office Action, page 7); However, the CCo cannot be both frame module and information module because they perform different functions as discussed above.

Examiner respectfully disagrees with Applicant's assertion. A frame module is the (see paragraph 25) central coordinator(Cco)) while an information module being the (see paragraph 75-79) topology table).

Applicant argues that (see page 17) Ayyagari merely discloses viable interconnections between nodes relating to two illustrative organizations, such as interconnection 40 between C and D (Ayyagari, par. [0043], lines 7-10; Fig. 1, ref. 40), not a communication module coupled to the frame module and the information module to manage communication using the information, as recited in claim 1. However, Examiner respectfully disagrees with Applicant's assertion. The current claim language "managing communication" is broad and in view of the broadest reasonable interpretation of the claim language Ayyagari does indeed teach the cited limitations.

Specifically, Ayyagari teaches a communication module (implicilty CCo comprises a communication module for communicating with other nodes) coupled to the frame module and the information module to manage communication between the local node and a remote node (see paragraph 21 and 75-79 where CCo maintains a topology table of the discovered node lists and topology is being update in paragraph 84, and paragraph 88 where node communicate with CCo is being specified with beacon message) in a second network using the information (see paragraph 21).

Applicant argues that (see page 18) Andric merely discloses a message receiver 430 receives incoming messages 410 and prepares them for processing by message processor 440 (Andric, paragraph [0212]), not a communication module to manage communication between the local node and a remote node in a second network using the information. However, Examiner respectfully disagrees with Applicant's assertion. Ayyagari does not explicitly teach a communication module and state information including at least one of network configuration, network status and network history. Andric in the same or similar field of endeavor teaches a communication module (paragraph 0212 and Figure 75) and state information including at least one of network configuration, network status and network history (paragraph 0128). Therefore, a communication module to manage communication between the local node and a remote node in a second network using the information is taught by Ayyagari, not Andric. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that (see page 19) Andric merely discloses a network topology update message (Andric, paragraph [0128]), not the network state information including at least one of network configuration, network status, and network history. However, Examiner respectfully disagrees. Andric does indeed teach the cited limitations. Specifcally, Andric in the same or similar field of endeavor teaches a communication module (paragraph 0212 and Figure 75) and state information including at least one of network configuration, network status and network history (paragraph 0128, If a cluster head receives the NETWORK TOPOLOGY UPDATE message and determines that a different parent cluster is linked to the cluster (i.e. satisfies the limitations network configuration (configuration being the information that a different parent cluster is linked to the cluster), network status (status being the information that a different parent cluster is linked to the cluster) and network history (history being the information that a different parent cluster is linked to the cluster as opposed to prior parent cluster)), it changes the parent cluster as indicated in the message (i.e. indicated information in the message satisfies the limitations network configuration, network status and network history).

Claims 2, 9, 14, 21, 26 and 33:

In regards to claims 2, 9, 14, 21, 26 and 33, Applicant argues that as discussed above, Ayyagari and Andric do not disclose or render obvious elements (1) - (3) as above. Accordingly, a combination of Ayyagari and Andric with any other references in

rejecting claims 2, 9, 14, 21, 26, and 33 is improper. However, Examiner has clearly shown above that Ayyagari and Andric do indeed teach the cited limitations.

Applicant argues that (see page 19) Barber does not teach "requesting discovery information", "transmit or receive a frame"; thus teaches away from the Applicant's invention. However, Examiner respectfully disagrees with Applicant's assertion. The cited limitations are taught by Ayyagari, not Barber. Specifically, Ayyagari does not explicitly teach a frame poller coupled to the frame transmitter to provide a polling frame requesting for information of the remote node. In the background of Barber et al. the same or similar fields of endeavor teaches the use of polling interaction (see Barber et al. paragraph 12 and figure 12 and paragraph 103 package up traffic between visitor clients). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further, in response to applicant's argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Claims 11, 23 and 35:

In regards to claims 11, 23 and 35, Applicant argues that as discussed above, Ayyagari and Andric do not disclose or render obvious elements (1) - (3) as above. Accordingly, a combination of Ayyagari and Andric with any other references in rejecting claims 11, 23 and 35 is improper. However, Examiner has clearly shown above that Ayyagari and Andric do indeed teach the cited limitations.

Applicant argues that (see page 21) the interference list is not included as a part of the network state information. However, Examiner respectfully disagrees with the Applicant's assertion. In view of the broadest reasonable interpretation of the claim language, Ayyagari and Andric in view of Nanda do indeed teach the cited limitations. Specifically, Ayyagari and Andric do not explicitly teach network state information including an interference list. Nanda in the same field of endeavor teaches network state information including an interference list (paragraphs 0010, 0013, 0014, 0065, 0071, 0076, 0079 and 0080).

Applicant cites various case laws in pages 21 and 22 and argues (see page 22) that the Examiner failed to establish the factual inquires in the three-pronged test as required by the Graham factual inquires. There are significant differences between the cited references and the claimed invention as discussed above. Furthermore, the Examiner has not made an explicit analysis on the apparent reason to combine the known elements in the fashion in the claimed invention. Accordingly, there is no apparent reason to combine the teachings of Ayyagari, Andric, Barber and Nanda in any combination.

Examiner respectfully submits that it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See In re McLaughlin, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In regards to Appellant's argument that, the alleged motivation advanced by the Office Action appears to be purely subjective reasoning supported only by a conclusory statement by the Examiner, Examiner respectfully submits that the following are some rationales which may be used when formulating a 103 rejection:

(1) Combining prior art elements according to known methods to yield predictable results.

(2) Simple substitution of one known element for another to obtain predictable results.

(3) Use of known techniques to improve similar devices (methods or products) in the same way.

(4) Applying a known technique to a known device (method or product) ready for improvement to yield predictable results

(5) "Obvious to try" - choosing from a finite number of identified, predictable solutions.

(6) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market

forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

(7) The TSM test. (Although the Supreme Court cautioned against an overly rigid application of TSM, it also recognized that TSM was one of a number of valid rationales that could be used to determine obviousness)

Examiner, finally, respectfully submits that the cited motivation also meets the rationale that known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

As such, Examiner respectfully disagrees with Appellant's assertion that there is no apparent reason to combine the teachings of Ayyagari, Andric, Barber and Nanda in any combination.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SALMAN AHMED whose telephone number is (571)272-8307. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571)272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Salman Ahmed/

Examiner, Art Unit 2419